

Creating Competitive Offers

Dan Ernst
202.530.7500



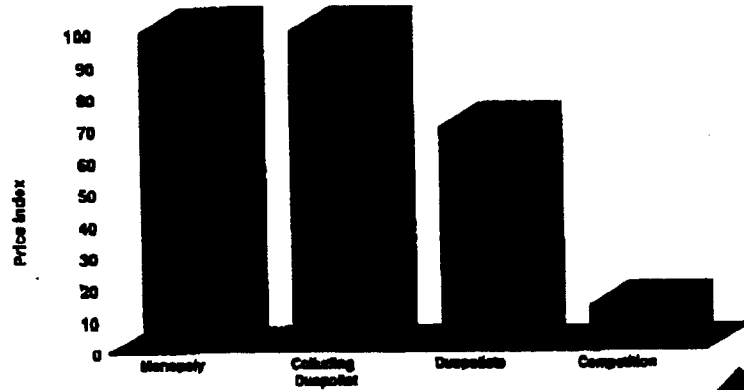
**Price is a necessary, but not sufficient,
condition**



Market Price Declines As New Firms Enter



Price Level Under Varied Market Structure



Competition

Cellular - PCS

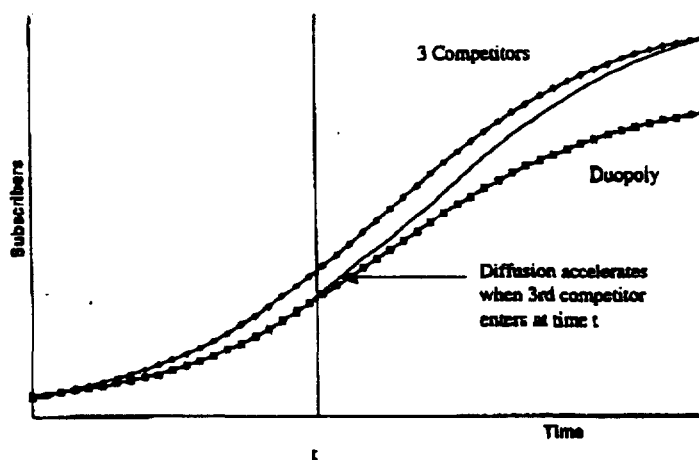
Long Distance

Local



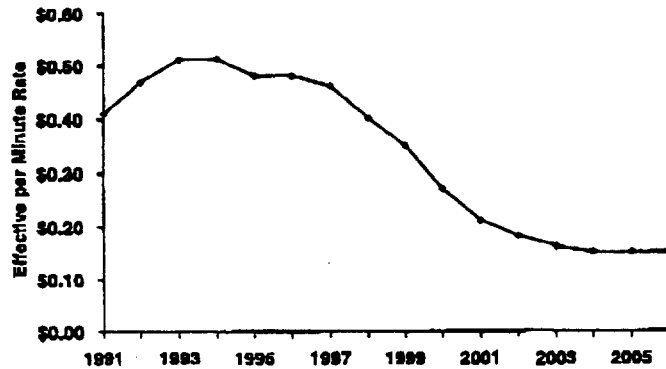
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Wireless Diffusion and the Competitive Environment



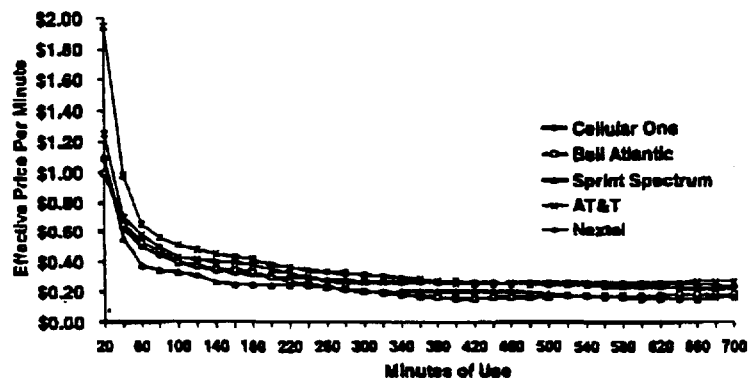
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Effective per Minute Airtime Rate for Wireless, 1991-2006



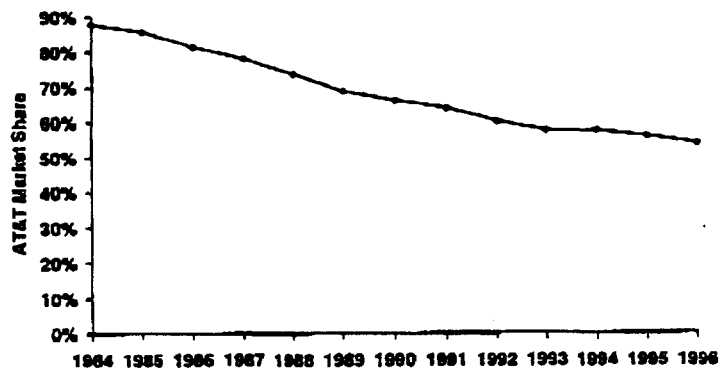
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Least Cost Per Minute, Washington, DC



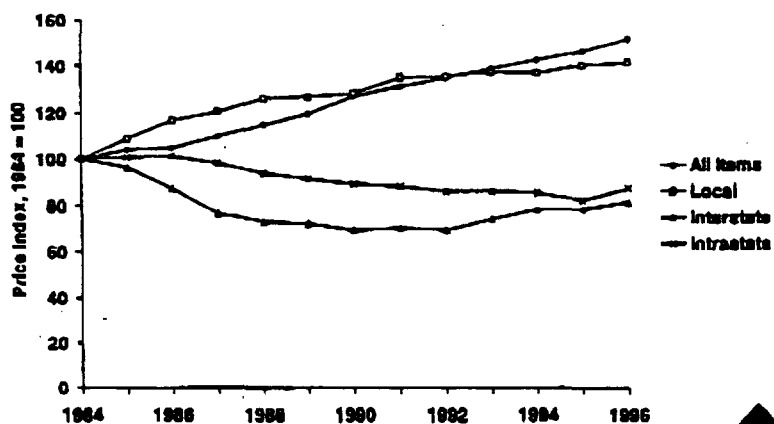
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AT&T Market Share, 1984 - 1996



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CPI, 1984 - 1996



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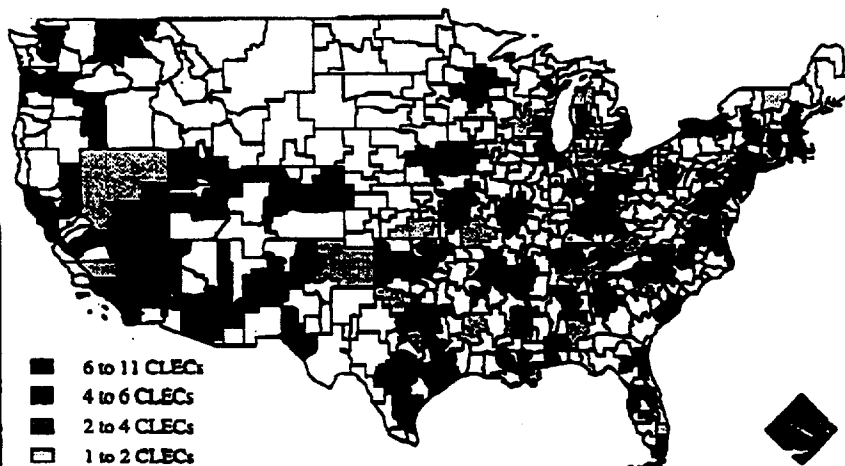
Local Competition Trends

- Today, CLECs hold 3.1% of the national business market. By 2001, CLECs will hold nearly 15% of the business market and 25% of the business market they cover.
- CLECs are providing a greater array of services by installing switches and are increasing their focus on providing services to end users. 65% of current CLEC revenue comes from end users.
- Today, access/private line service accounts for less than 50% of their domestic local revenues. By 2001, access/private line services will account for approximately 30% of CLEC local revenue.
- Competition in the residential market is limited to a few cable telephony/Internet deployments and resale.



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CLEC Density per BTA



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Market Conclusions

- Competition is coming to every facet of the communications industry.



- Prices will fall.



- All Competitors, incumbents and entrants, will charge the "Market price."



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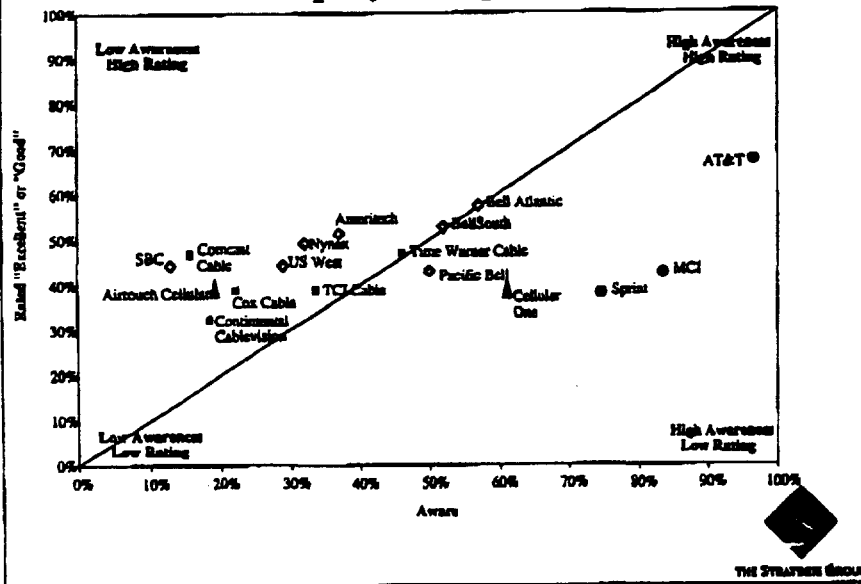
Given price, how will competitors
differentiate themselves?

Branding and Bundling

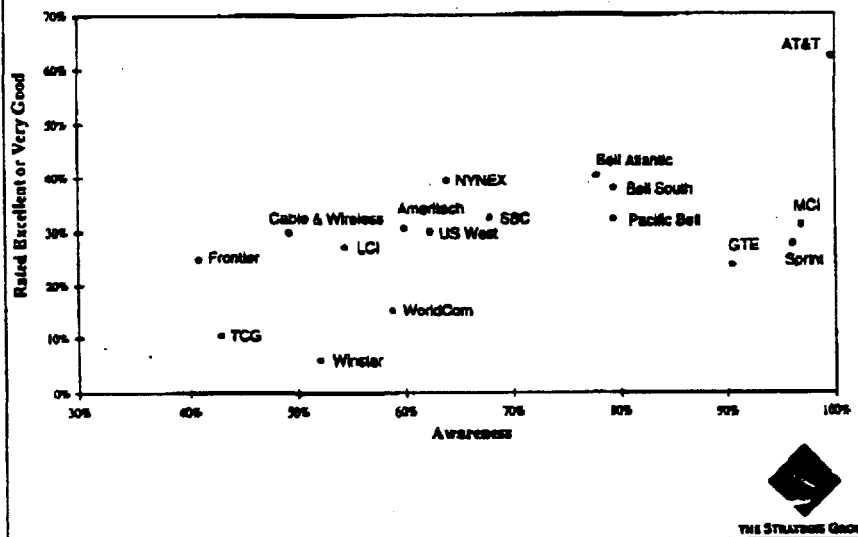


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Awareness & Company Ratings, Among Consumers



Awareness & Company Ratings, Among Businesses



Factors of Perception

Awareness

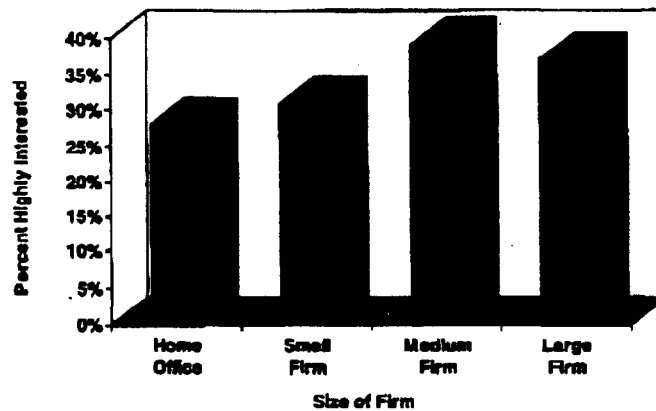
- Advertising
- Market Presence
- Market Share
- Product Breadth

Quality

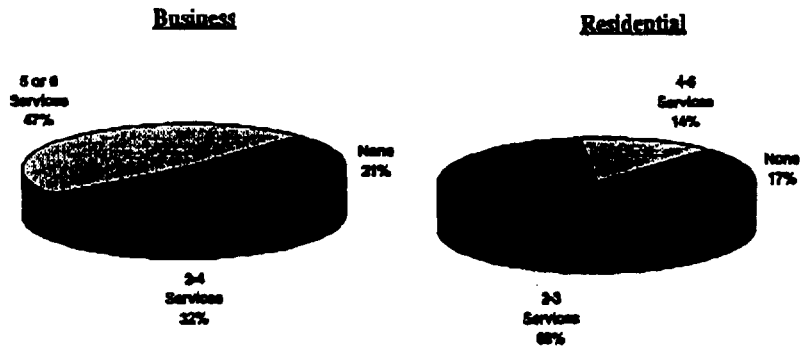
- Product Quality
- Customer Service
- Product Breadth
- Awareness



Telecommunications Managers Highly Interested in a Sole Source Vendor



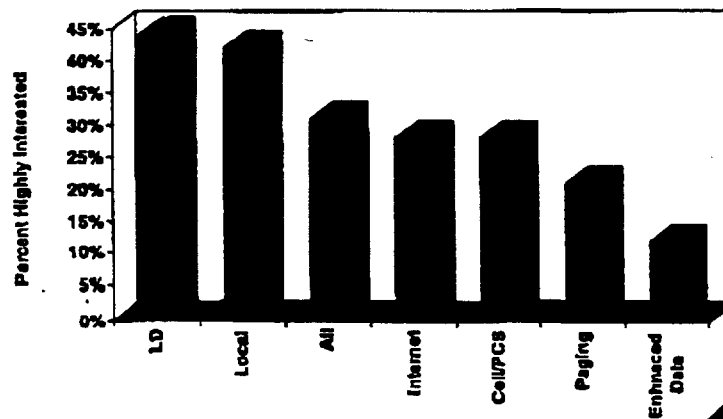
Interest in Service Bundles



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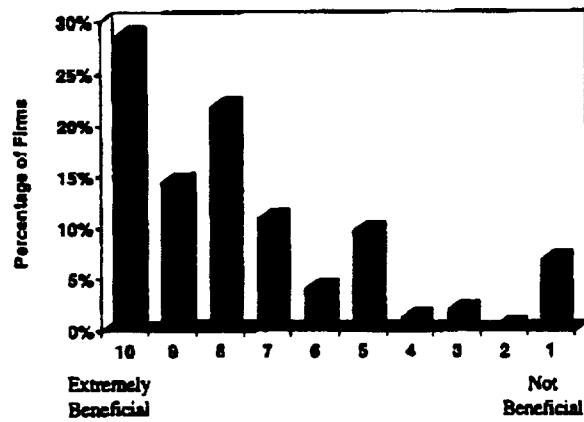
Business Preference for Bundled Services

Services Desired In Bundle



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Benefit of Bundled Price Discount, Among Businesses

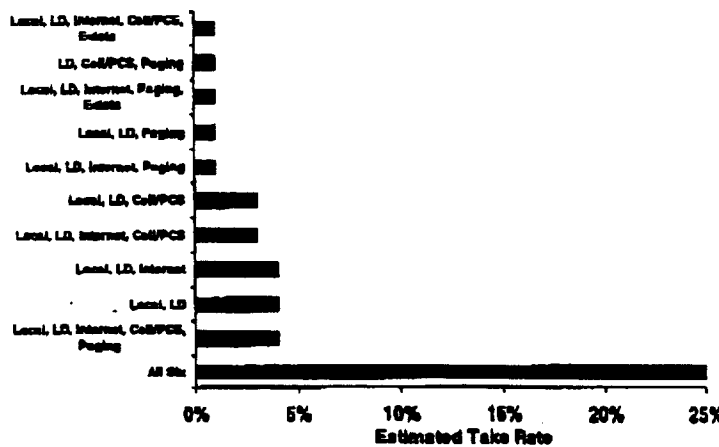


Mean Rating: 7.58



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Estimated Take Rate of Select Bundles



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**Competitive carriers will serve
high value customers:**

- Customers who want bundles - over 80%
- Customers who want complete bundles - 15% to 50%
- Customers that value better service - 50%
- Customers, for which price is not critical - 50%



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Article 13 of 13

TPHY9620900025

One-stop shopping for voice, data and video. (includes related article on the advantages of integrated service access multiplexers)

Anand Parikh

1311 Words

9441 Characters

06/24/1996

Telephony

Page 166

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Now that telecommunications reform has opened the cable TV and telephony marketplaces to competition, telecom providers will no longer have restrictions on the voice, data and video products and services that they can offer to customers. Unfortunately, all competitors have the same freedoms.

Integrated network access technology has allowed carriers to protect and expand their customer bases by giving end users the flexibility to select the optimal combination of carrier services for their unique traffic and volume needs - and to access them economically over a single link.

In today's global economy, few companies operate in one location. Businesses interact with customers - and employees - in different towns, countries and time zones. Advances in client-server technology and the explosive growth of desktop and personal computing enable users to access information from remote sites and home offices as easily as if they were local. Sophisticated communications systems allow them to transfer that information - instantly and transparently - wherever it's needed, whether to store a message in a voice mailbox or forward service calls to an after-hours customer support center. Today, the network has truly become the marketplace, with the exchange of information being the currency of commerce.

Source: Telephony, June 24, 1996

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Page 1

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With the worldwide market for telecommunications products and services expected to top \$1 trillion a year by the turn of the century, the opportunities for **telecom providers** are enormous - but so are the risks. Competition is steadily driving down prices - and profit margins - on everything from telephone calls to network connections. And deregulation is eliminating barriers between previously distinct industries such as cable and telephony.

Today, open markets and integrated voice-data switches have forced telephone companies to look over their shoulders at competitors they are unaccustomed to facing, which threaten to take away long-term customers they never expected to lose. Consumers face their own problems. Advances in technology may be creating a constant supply of new products and services, but the sheer number of options and the speed with which they evolve have many end users nervous about committing to any of them. And the increasing din of competition leaves them wondering how to choose among seemingly identical products from suddenly overlapping service providers.

One-Stop Shopping

Integrated network access server technology offers a flexible solution to these problems. By providing a single access point to the public network from the customer premises, network access servers allow **telecom providers** to match the requirements of their customers' voice, data and video applications to the most appropriate carrier services, as well as guarantee an inexpensive, modular migration path as business needs change or new services become available [ILLUSTRATION FOR FIGURE 1 OMITTED].

Integrated network access servers use a flexible chassis architecture that can simultaneously accommodate different interface modules. By supporting a range of carrier services in a single unit, **telecom providers** can tailor their offerings to the particular needs of the market they wish to penetrate.

At the low end are residential and home office customers. In the past, this market was viewed as a low-margin market dominated by basic telephone service subscribers who didn't need much more than a simple

Source: Telephony, June 24, 1996

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voice connection. But that has changed.

Today, residential users often demand the same advanced services typically found in many corporate offices. With the proliferation of personal computers, many residential subscribers want high-speed access to on-line services and other networked data repositories. And as more people move their offices into their homes, the need for sophisticated voice services is similarly increasing.

By placing a network access server in a street cabinet, telecom providers can deliver high value-added services, such as ISDN lines for high-speed data access and simple Centrex-like custom local area signaling services - directly to a subscriber's residence. Because it is modular, one server can be fitted with any necessary mix of interfaces to handle the varied requirements of multiple subscribers along the same street.

Business parks and commercial centers are another important market. Subscribers may range from individual small businesses or shops to remote offices or sales locations associated with large, multisite corporations. Their needs are similarly varied, from basic service to full-function Centrex for voice and leased line, packet services, ISDN and frame relay for data. Some users may even require videoconferencing support. Similar to the residential environment, a single network access server located inside the building can be equipped with this large mix of unrelated subscribers and services.

At the high end are large corporate users. In the corporate environment, it is not unusual to find the same subscriber using a wide range of sophisticated carrier services such as T-1 for voice, switched digital for video and frame relay for local area network interconnection.

By using one or more network access servers to consolidate voice, data and video traffic, corporate users can reduce overall network access charges dramatically and eliminate the need to maintain separate - and costly - multiplexers and other specialized interface equipment.

Benefits

Source: Telephony, June 24, 1996

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For **telecom providers** looking to differentiate themselves in the marketplace and gain a competitive advantage, network access server technology offers many important benefits, including value-added services, **one-stop shopping**, convenient network management and flexible migration of services.

Value-added services. Because of their modularity, network access servers enable **telecom providers** to deliver high value-added features and services cost-effectively to subscribers who would otherwise be difficult to reach. For example, it was previously impractical for many businesses to purchase Centrex service. Today, the low marginal cost of adding a single Centrex interface to a network access server allows **telecom providers** to give even small businesses fairly sophisticated Centrex capabilities at very affordable prices.

One-stop shopping. In today's competitive market, customers are always looking for a better deal, and because of deregulation, they can often find one. To hold onto subscribers, **telecom providers** must be able to offer a full range of services - and deliver them immediately. For example, a **business customer** may begin by purchasing simple Centrex service and later request an ISDN line for a particular application. Once the network access server is in place at or near the customer premises, adding ISDN is as simple as popping in a new module.

Convenient network management. **Telecom providers** need sophisticated network management tools to stay on top of the rich and varied mix of communication services that are typical in most real-world business environments. By concentrating these services at one access point, the network access server provides a convenient mechanism for network configuration and management.

Flexible migration of services. Perhaps most importantly, subscribers need a convenient, risk-free way to migrate legacy traffic to newly emerging communications technologies. As frame relay gains wider acceptance, for example, many users will want to relocate their X.25 traffic to frame relay circuits.

Network access servers allow users to move from X.25 to frame relay

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on a line-by-line basis, often by simply reprogramming the interface module.

With deregulation imminent, **telecom providers** are searching for ways to differentiate themselves from their competitors, as well as hold on to and expand their existing customer base.

Network access server technology allows **telecom providers** to tailor communication services to the needs of a diverse spectrum of subscribers, from home office users to multisite corporations. Those services can be delivered to customers quickly and economically with a modular architecture, allowing users to minimize network access charges by choosing the most cost-effective communications technology for their specific applications.

RELATED ARTICLE: A better choice

Integrated service access multiplexers offers carriers a more cost-effective solution than traditional digital loop carrier equipment. Why?

- * Many types of services can be delivered from one box to easily meet diverse and changing customer needs.

- * Switch signaling integration lowers the cost of deployment through direct switch connection.

- * Technology integration simplifies operations and management.

- * Remote grooming improves bandwidth efficiency in the local loop.

Anand Parikh is Vice President of Marketing and Business Development for Telco Systems, Norwood, Mass.



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Article 61 of 264

NBNN9822201005

CLECS Becoming One-Stop Shop As Revenues Soar - F&S

Sylvia Dennis, Newsbytes

422 Words

3337 Characters

08/10/1998

Newsbytes News Network

NEWS

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MOUNTAIN VIEW, CALIFORNIA, 1998 AUG 10 (NB). Confirming a trend that many in the industry have noted, a report just out from Frost & Sullivan sees CLECs (competitive local exchange carriers) as becoming one-stop **telecoms** shops as revenues soar.

According to the \$2,950 report, the CLEC marketplace has evolved over the last 24 months from the former competitive access providers (CAPs) which were able to bypass the incumbents (incumbent local exchange carriers or ILECs) in providing local service to their **customers**.

Now, the report notes, the opening of the local market will result in a new wave of competition, further stimulating the already-booming industry.

The report, entitled "US CLEC Strategies for **Business Telecommunications Services**," notes that the **CLEC business services** market generated over \$3.1 billion in revenues in 1997, and revenues are predicted to increase as CLECs strive to become a **one-stop-shop** for their **customers**.

"The **aspect** of having a single service provider for all of the telecommunications needs of an organization is attracting the attention of **business customers** who are constantly searching for ways to improve operational efficiency," explained Imran Kahn, F&S's telecommunications

Source: Newsbytes News Network, August 10, 1998

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~~DOW JONES~~

Page 1

Dow Jones InteractiveSM

analyst.

Interestingly, F&S notes that other strategies being employed by CLECs to improve **business** include adding access lines to their networks and allowing provisioned services to an increasing number of **business** customers, exploiting interconnection agreements in order to quickly enter local markets, and promoting the increased use of the Internet, high-speed data transfer and enhanced voice services by their customers.

"The **business data services** market revenues will grow extensively as a large number of businesses turn to Internet-related services," said Neha Jhaveri, another F&S telecommunications analyst.

"The trend toward outsourcing of telecommunications services will also lead to increased CLEC revenues," she said.

The report notes that there are more than 150 small and large CLECs in the US at the moment, although this figure is increasing rapidly as reselling provides companies with a quicker and less expensive market entry.

F&S says that the report and its issues will be discussed at its Second Annual Telecommunications Services Industry Conference, which takes place at the Boston Park Plaza, Boston, Mass., from October 8 for two days. Just prior to the event will be a one day growth engineering management seminar on October 7.

Further details of the event, which costs \$1,850 to attend, and which is being sponsored by The Dialog Corporation, SRI Consulting and VocalTec, can be found on F&S' Web site at <http://www.frost.com>, selecting conferences as an option.

Reported by Newsbytes News Network, <http://www.newsbytes.com>.

13:27 CST

Press Contact: Kimberly Barney, F&S Press Office 650-237-4383; Russ Pecoraro, F&S 650-237-4386; Reader Contact: F&S US 212-964-7000; Fax 212-619-0831/WIRES TELECOM/

Source: Newsbytes News Network, August 10, 1998



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Article 13 of 264

COMN9835700013

One-stop telecom shopping

Tony Fisch

783 Words

6050 Characters

12/01/1998

Communications News

Page 22

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Multi-service digital access equipment combines voice and high-speed data services over T1.

In April 1998, the Maryland-based American Communications Services, Inc.(ACSI), changed its name to e.spire Communications, Inc., to mark the beginning of a new phase in the company's evolution. E.spire's mission was to lead the industry in providing choice and **customer** solutions with the industry's premier family of integrated voice and data services, Internet solutions, and **customer business** applications.

To that end, the company introduced e.spire Gold, a new integrated communications product developed specifically for small businesses. **Business customers** can "**one-stop shop**" for all local and long distance voice services-and in certain e.spire cities, Internet-from a single provider and receive one monthly bill. E.spire Gold is available over T1 services at competitive prices.

"**Customers** really want just three things from a telephone company-savings, convenience, and simplicity," says Vernon Irvin, e.spire senior vice president of marketing and strategy.

"E.spire offers all three. As a facilities-based provider, we are able to pass on to **customers** the savings that result from the

Source: Communications News, December 1, 1998

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DOW JONES

Page 1

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efficiency of operating our own network."

Customers who need more telephone lines or integrated voice, data, and Internet services can choose e.spire Platinum. Introduced earlier this year, e.spire Platinum allows small and medium-sized business customers to order voice and data services from a single carrier and receive an array of benefits that include flat-rate local service, custom calling features, long distance service, Internet and high-speed data, the highest levels of personal customer care, and billing for all services on one invoice.

In August of this year, e.spire announced that it has installed state-of-the-art Lucent SESS-2000 switching systems in El Paso, Texas, and Greenville, S.C., bringing the total number of switches to 20. This is on target with the company's plan to offer facilities-based local switched telecommunications services in 30 cities by mid-1999.

Such aggressive growth requires strategic business partnerships that can support it, which is why e.spire works with Carrier Access Corporation (CAC). E.spire needed an intelligent solution that would work today and grow with the company tomorrow.

Located in Boulder, Colo. CAC is a leading provider of multi-service digital access (MDA) equipment to competitive carriers. The company's products provide comprehensive digital "last-mile" solutions for provisioning enhanced voice and high-speed data services by carriers. The key to MDA is intelligent, carrier-owned technology at both the carrier's and end-customer's location.

"Our MDA products are differentiated by a very high level of hardware and software integration, designed to integrate features and maintenance capabilities, while dramatically reducing equipment size, power, cost, and installation time," says Stephen Rogers, marketing manager, Access Bank Group, at CAC.

After an analysis of various products in the industry, e.spire selected CAC's Access Bank II voice and data multiplexer. The Access

Source: Communications News, December 1, 1998

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Bank II permits the combination of up to 24 enhanced voice lines with managed highspeed Internet or enterprise connection data services on T1 access lines. With CAC's equipment deployed, e.spire's customers are able to combine voice services with highspeed data services at very cost-effective rates.

"We selected the Access Bank II for its ability to deliver integrated voice and data over a single T1 to our customers in a compact package," says Bill Stipe, e.spire's vice president, platform engineering. "We're also excited about their plan to incorporate the unit as part of their next-generation DLC, allowing e.spire to maximize the capabilities of our digital integrated network."

The Access Bank II includes two T1 network interfaces with fully integrated CSU and Data Service Units (DSU), offering up to 3 Mbps of total throughput. Dual T1 interfaces can accommodate future bandwidth requirements, connections to digital PBX TIs, and can provide T1 protection for endusers' mission-critical voice and data applications. The two built-in data interfaces offer connectivity for high-speed Internet routers, frame relay devices, video, and other high-speed data applications. By combining digital data with voice over one or two T1 lines, bandwidth can be utilized more efficiently, saving on communications access costs. The Access Bank II also includes sophisticated management capabilities such as an optional Ethernet SNMP LAN management connection for configuration and monitoring.

"We've worked with our CLEC customers, like e.spire, to meet the growing demand for integrated solutions that enable new services economically," says Roger Koenig, CEO of Carrier Access. "Our focus is to decrease capital and labor costs for competitive carriers, while optimizing the reliability of digital service delivery."

The market is being transformed by customer demand, deregulation, and rapid advances in technology. E.spire and CAC have answered the call, offering their customers simple, smart, and costeffective solutions that work for widescale deployment.

Source: Communications News, December 1, 1998

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Circle 255 for more information from Carrier Access Corporation

Circle 286 for more information from e.spire

Fisch is president of Tony Fisch Consulting, Encino, Calif.

Source: Communications News, December 1, 1998

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DOW JONES

Page 4





Predicting the Future of Global Telecom Alliances

Ameritech International Operations Conference

Ameritech/Gemini Consulting

8 October 1998

Agenda

- **Objectives**
- **Overview of Global Telecom 'Alliances'**
- **Needs of Multinational Corporate Customers**
- **Ability of Traditional Alliances to Meet Customer Needs**
- **A View of the Future Global Telecom Alliances**
- **Discussion about Implications for Ameritech**

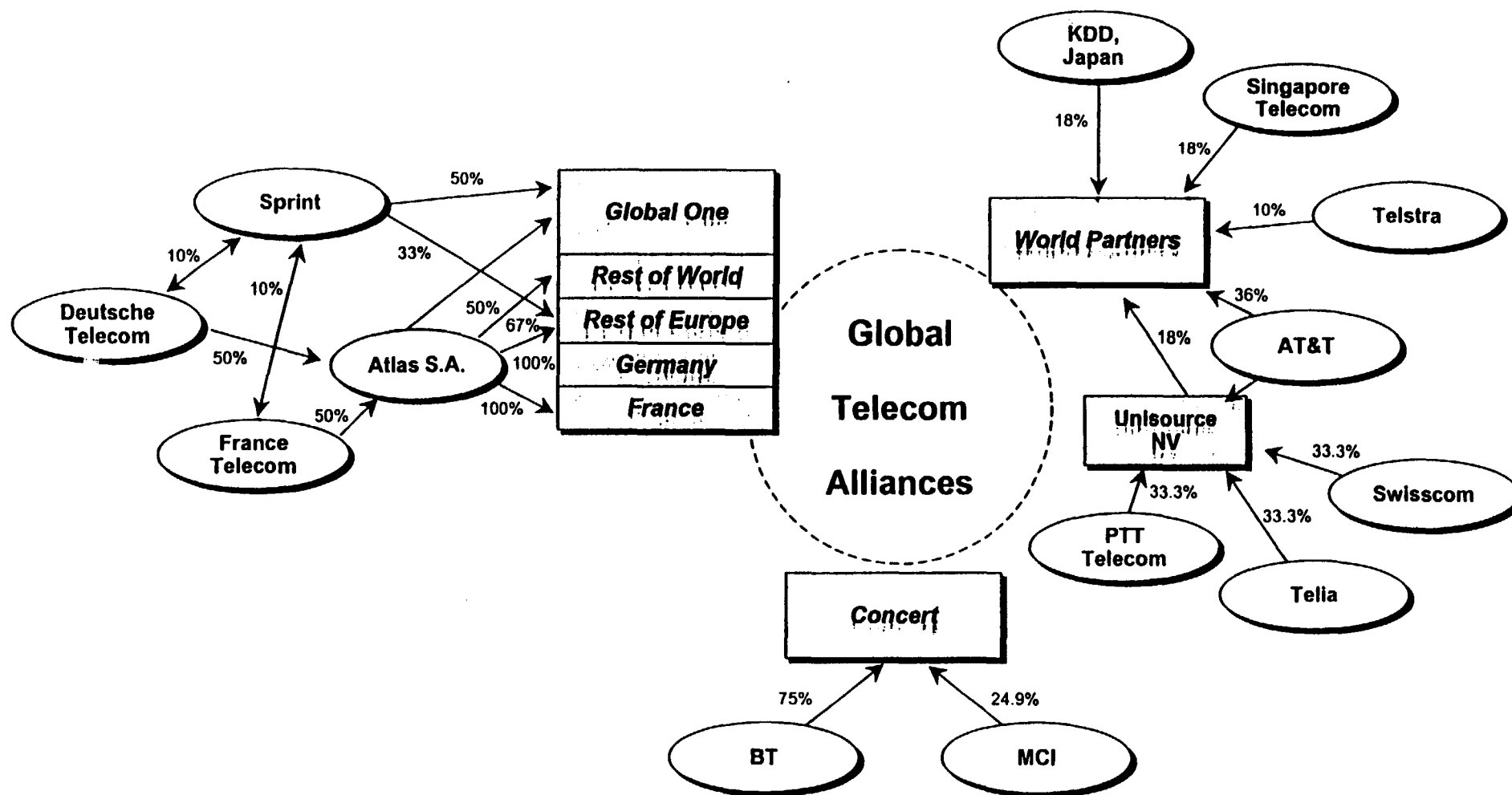
In this presentation, we assess whether the traditional global telecom alliances best meet corporate customers needs

Objectives:

- **Understand the strategies of traditional telecom alliances.**
- **Provide an overview of multinational corporate customer needs.**
- **Evaluate whether the traditional alliances are best able to meet end customers' needs.**
- **Describe potential alternative 'alliance' models in telecom.**
- **Infer implications for the future of global telecom alliances.**

Global Telecom Alliances

Historically, there have been three traditional global telecom "alliances"



Sources: <http://www.btglobal.com/btgi/100uli.htm>; <http://www.dtag.de/search/English/index.htm>; http://www.francetelecom.fr/vanglais/apropos/int_corp/htm.

All three alliances were established with the same customer objective—seamless, global one-stop shopping

	Global One^a	Concert^b	World Partners^c
Mission:	"To be the premier provider of global telecoms services to business . . . providing seamless telecoms services worldwide"	"To deliver world-class, global telecoms products and services"	"To provide high-quality global, seamless voice and data communications services (WorldSource[®] services) to multinational corporations globally"
Benefits:	<ul style="list-style-type: none">• Global coverage• Full range of services• One point of contact• Best networking structure	<ul style="list-style-type: none">• One-stop shopping• Simplified services• Consistency in services and standards• Worldwide billing	<ul style="list-style-type: none">• Global solutions• Consistency globally, but a local service• Single point of contact
Customer Base:	"The first or second supplier for 50 of the world's top 500 companies"	"Serves approximately 40% of the fortune "Global" 500. Nearly 3,900 of the world's leading multinational companies are customers"	"Over 750 top multinational companies have installed and are using Worldsource[®] services"
Key Differentiator:			

Sources:

a. http://www.global_one.net/en/press/facts_body.html; Nye, Europe: "Global One Builds for Growth", *Techweb News*, 4/2/98. In addition, Global One targets the carrier and consumer markets.

b. http://www.concert.com/ab_ft.asp.

c. http://www.worldpartners.com/aboutwp/awp_wpc.html.

Internally, the alliances were originally expected to help incumbents expand reach and leverage assets

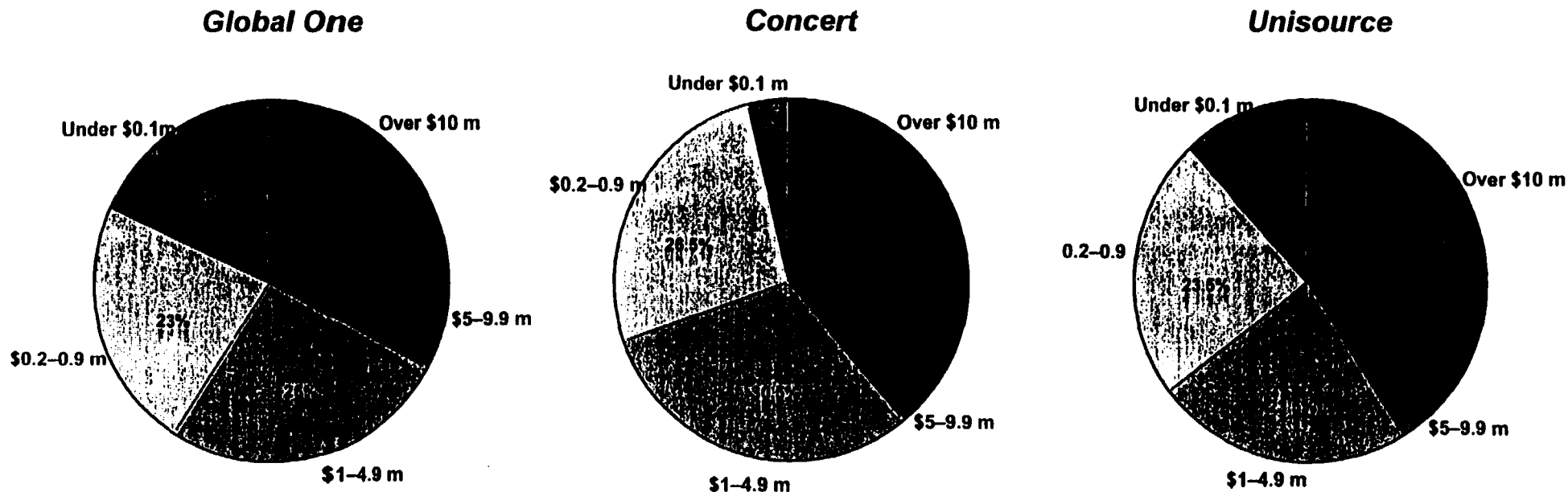
Rationale Underlying Telecom Alliances

Category	Objective	Global One	Concert	World Partners
Management	• Share investments	✓✓	✓✓	
	• Leverage balance sheet	✓	✓	
	• Fill strategic gaps in value chain			
Access to Technologies/ Skills	• Access best in class technologies	✓	✓	
	• Speed to market	✓	✓	✓✓
	• Reduce technology risk			
Access to Markets	• Enter new geographies	✓✓	✓✓	✓✓✓
	• Access restricted geographies	✓✓	✓✓	✓✓✓
	• Access end customer	✓✓	✓	✓

Players follow one or more strategies simultaneously.

Approximately one-third of global alliance customer base is very large multinationals

Annual Telecoms Budget of Customer Base ^a (\$ million)



The top 5,000 multinational customers are expected to spend \$200bn on telecom services by the year 2000.^b

Note: 713 telecom users from 85 countries.

a. http://www.totaltele.com/winning/winning_carrier.html. 14/7/98.

b. http://www.concert.com/ab_ff.asp.

Alliance companies have been most successful in targeting corporate mega deals

Examples

Company	Service Bought	Revenue
AT&T/World Partners	<ul style="list-style-type: none"> • Virtual network for ICI^a through Unisource AT&T virtual network services in Europe and World Partners virtual network services outside Europe. • Whirlpool European data network over 40 sites • Provide NCR for voice and data services globally • Act on behalf of MasterCard^b with World Partner carrier members; 70 country virtual private network with global management and service-based management 	<ul style="list-style-type: none"> • \$30m over 5 years • Undisclosed over 5 years • \$1.5m over 3 years • Unspecified amount over 10 years
Concert	<ul style="list-style-type: none"> • Contract with Cisco systems to provide managed data services. 	<ul style="list-style-type: none"> • \$3m over 3 years
Global One	<ul style="list-style-type: none"> • Virtual private network for 80 Zeneca offices across Europe. • Link Science companies in Russia, Ukraine and Kazakhstan (10 institutions) • Provide People's Bank of China with advanced data network for Clearing and Payment System. • Call Centre for Mercedes Benz. 	<ul style="list-style-type: none"> • \$14 m over 3 years • Unspecified • Unspecified • \$6.8m over 3 years

However, what is the long-term value of these deals? Pre-tax profit margins forecast to drop below 1% by 2002 for traffic from multinationals.^d

Sources:

a. UK, Global One, *Presswire*, 15/7/98.

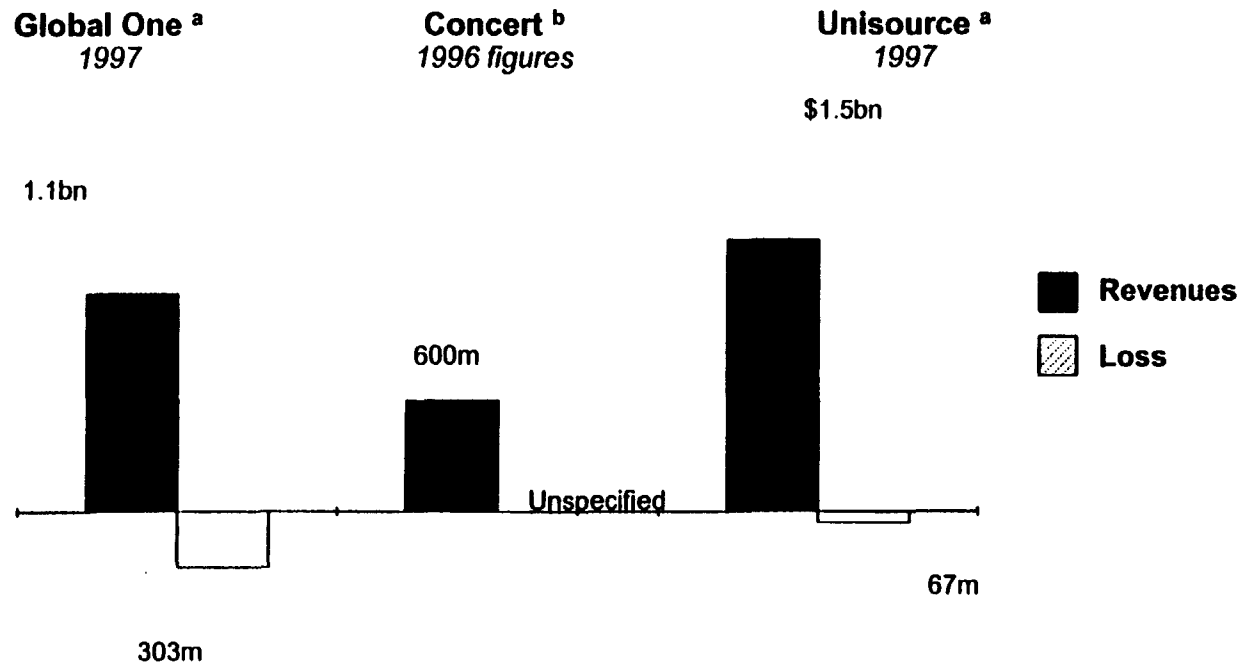
b. M. Thyfault, USA: MasterCard, *CMP Publications* (16/11/97).

c. UK: AT&T, *MZ Presswire*, 20/11/97.

d. R. House, Europe: *Corporate Finance, Institutional Investor*, 30/11/97.

However, to date no alliance is profitable

Global Alliance Revenues 1996 or 1997 (US\$bn)



World Partner data is unavailable, they state they are "highly profitable".

Source:

a. USA, *Network Briefing*, 4/2/98; Asia, *Industry Express*, 1/8/97; UK, *Network Week*, 19/11/97.

b. Singapore, *Straits Times*, 19/6/98; Epsom Communications Companies Analysis, 10/97.

In reality, the alliances have always struggled to provide the 'seamless' services and support which are their mandate

- **Alliance partners often have different agendas:**
 - Partners sleep in the same bed, but have different dreams.
- **Individual partner agendas sometimes take precedent over the alliance:**
 - A partner may under-optimize sale of an alliance service to secure highly profitable national business or sales via one of their international investments.
 - Further problems arise as standards, access methods and regulations differ between countries:
 - Interoperating between different networks using different switches is inherently complex.
 - Alliances are fundamentally hindered by different legacy systems and networks that are difficult to interconnect.
- **Distribution and customer service consistency are hard to achieve with the patchwork global agreements:**
 - Distributor networks are common and yet each is run differently.
 - SLAs are the only way to manage consistency and the process is inevitably complex.

The alliances' failure to deliver is linked to inherent structural flaws in an alliance versus an ownership situation

Unstable Structure

- **Players change alliance with alarming frequency.**
- **Weak link to equity to ensure commitment.**

Internal Focus

- **Too much effort is spend on making the alliance work, players risk taking their eye off the market.**
- **Management by committee, rather than direction from a board.**
- **Management time is often spent on resolving internal system and service compatability issues.**

Unproven Return on Investment

- **No global telecom alliance has published profitable figures.**
- **Global One appears to have little confidence in a break-even by year 2000.**

"Alliances are a defensive strategy designed to protect market share at home by giving better deliverability of telecoms services in foreign markets for your best customers. Now people are having to rethink what alliances really mean."—C. Bataillard, Managing Director, J. P. Morgan

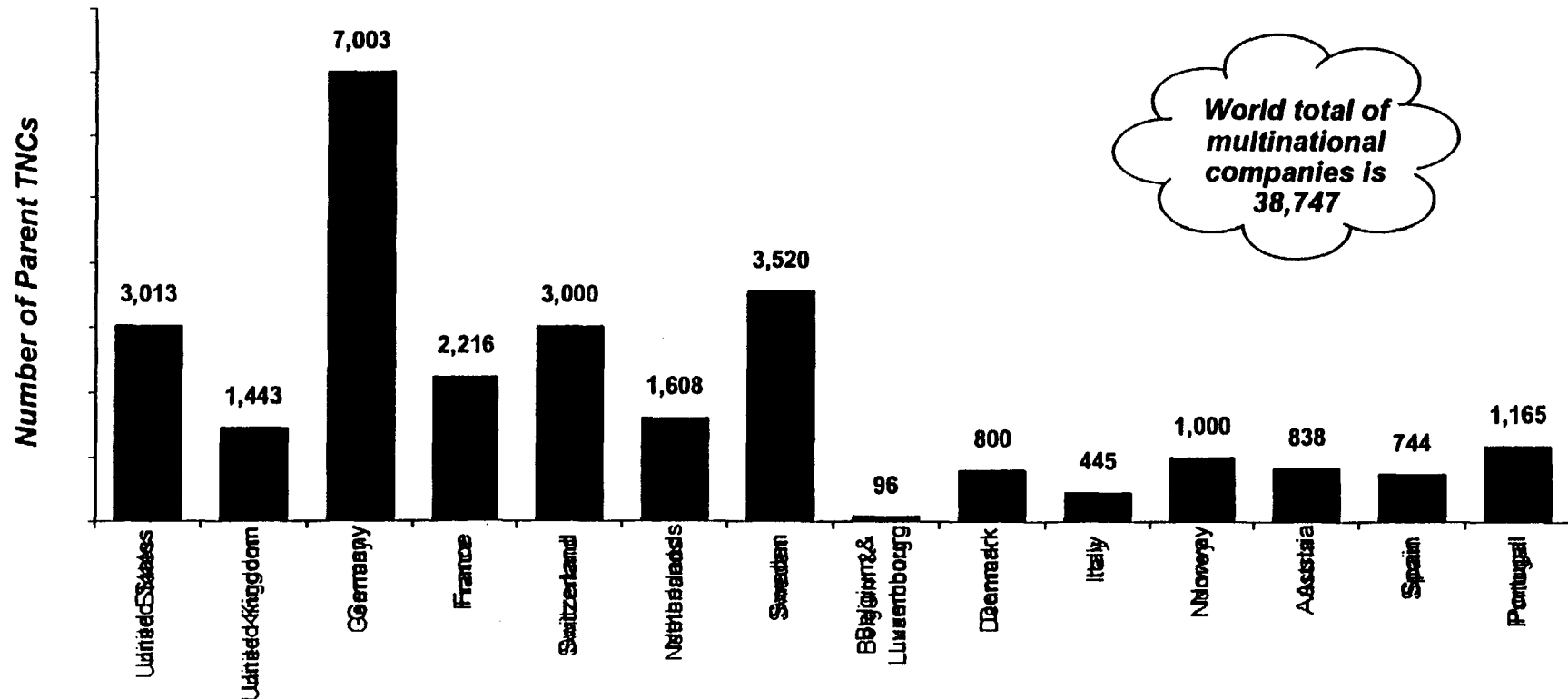
Owning the network offers a more effective vehicle to deliver the right customer experience.

Needs of Multinational Corporate Customers

OVERVIEW OF CUSTOMER NEEDS

Of the world's 40,000 multinational companies, 69% are located in the US and Europe

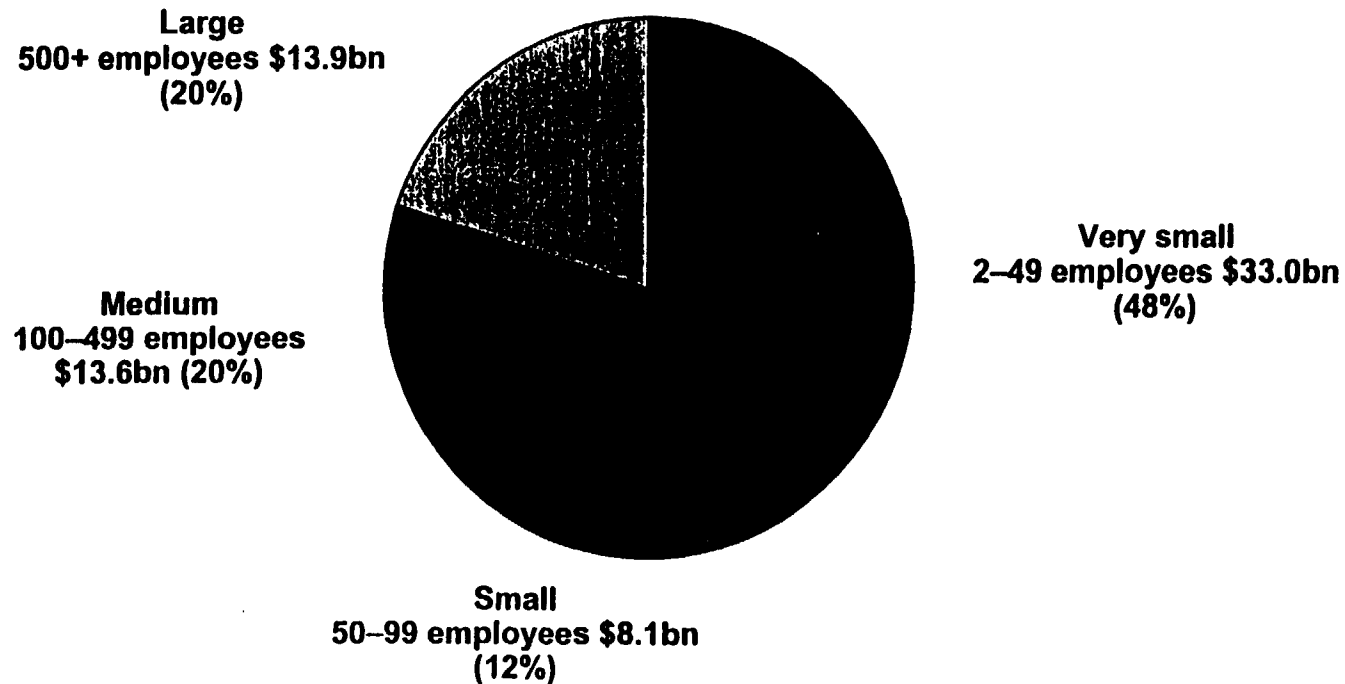
Number of Parent TNCs by Country, 1993



Source: World Investment Report, 1996, United Nations.

In Europe, large businesses account for 20% of business telecommunications spend

***Business Telecoms Spend by Business Size
Europe, 1996^a***



Globally, multinationals account for 15 – 20% of telecom revenues, spending over \$100bn a year.^b

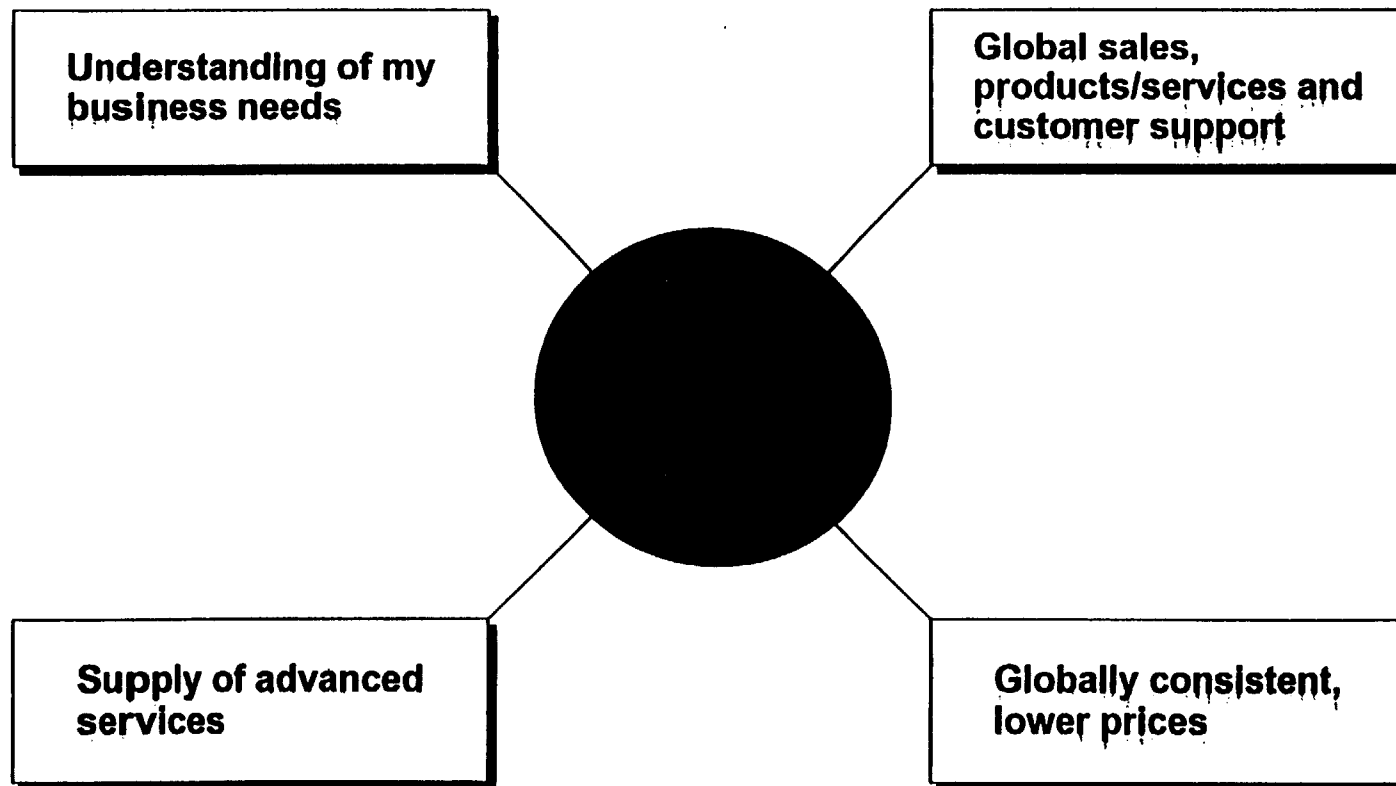
Source:

a. Eurodata, 1997 (analysis covering SMEs in 17 countries across Europe), analysis to extrapolate SME sample to large businesses.

b. H. Jones, Special Report Telecommunications, Telegraph, 26/9/97; D. Lynch, Europe, USA Today, 2/6/97.

OVERVIEW OF CUSTOMER NEEDS

Multinationals are looking for global services, common pricing, and more advanced services



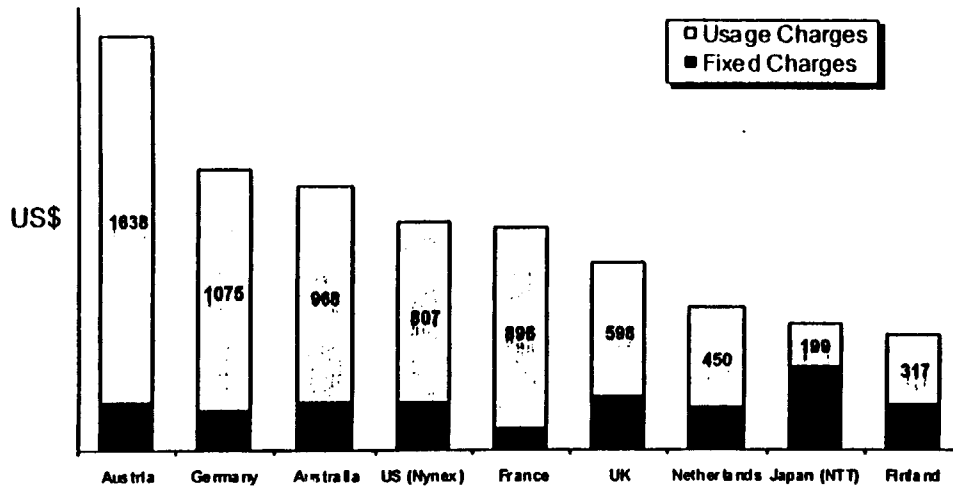
Source: http://www.bt.com/global_reports/1998-99/intro.htm, 8/7/98; http://www.bt.com/global_reports/european_business/page 6.htm, 8/7/98; <http://www.tma.org.uk/Industry/research/TmaSurv98Pres4.htm>, 29/1/98.

OVERVIEW OF CUSTOMER NEEDS

Multinational corporate customers want consistent worldwide pricing they still do not receive



OECD Business Tariff Basket, 1996 ^a
(Average Annual Spend US \$)



Issues for Customers

- **"Our transatlantic link (costs) half of what we're paying now for leased lines in Europe"**
—D. Davies, General Director, DANTE ^b
- **"There is considerable room for improvement . . . prices could drop to a third or quarter of current levels"**
—A. Fischer-Madsen, Chairman, Danish Data Association ^c
- **"The quality is there, but hopefully with deregulation, the pricing will get better"**
—J. Calisch, Director of IS, Woodland Hills Shipbuilding ^d

"The uplift that (European PTOs) apply to cross-border lines runs counter to the single market and a competitive telecoms market".

—N. White, Vice Chairman, INTUG ^d

Source:

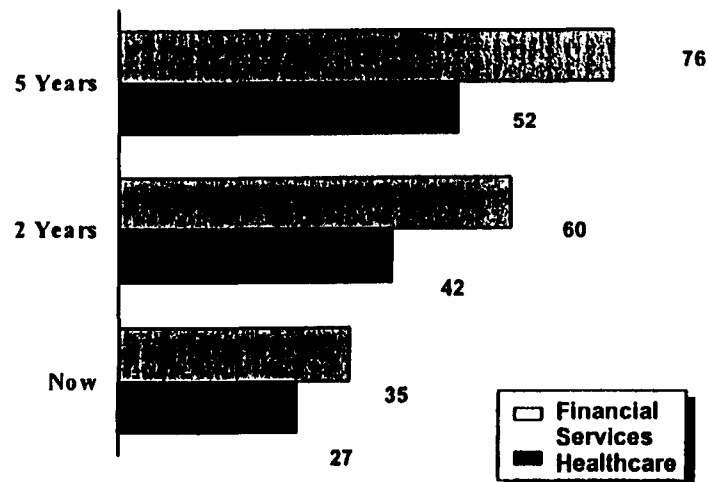
- a. OECD, *Communications Outlook*, vol. 1, OECD 1997.
- b. Camille Mender, "World: Users still frustrated by leased line vagaries", *Communications Week International*, 2/2/98.
- c. Camille Mender, "Europe: New Years Resolution?", *Communications Week International*, 19/1/98.
- d. Mary Thyfault, "USA: Telecom Compromise", *Information Week*, 22/12/97).
- e. Madeline Acey, "EU: Are Euro PTOs taking the line at least resistance?", *Network Week*, 23/4/97.

OVERVIEW OF CUSTOMER NEEDS

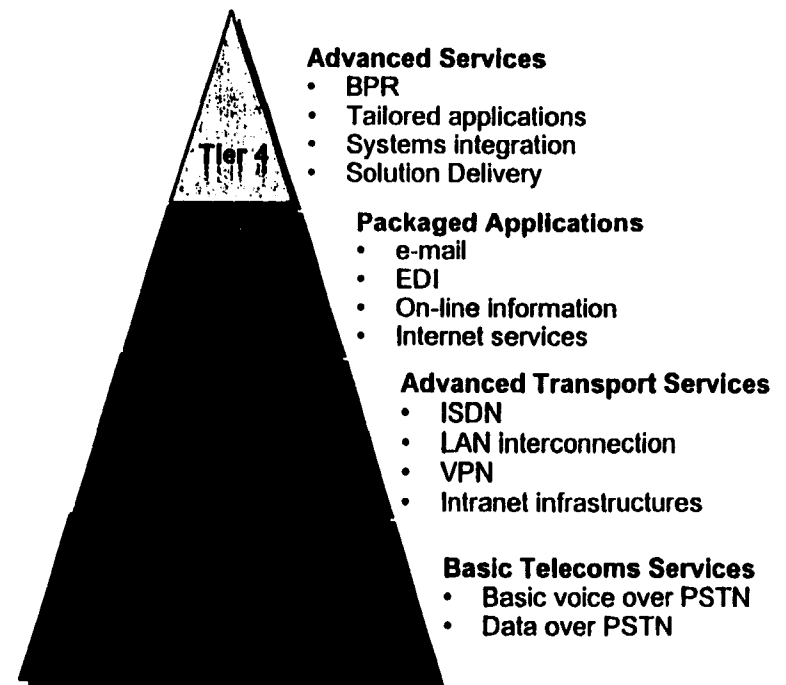
In addition, multinational corporate customers are demanding more advanced services and solutions



% of customers rating advanced services as very important ^a



Communication Services Value Chain ^b



This will mean telcos also need integrator capabilities or they may not retain the customer relationship.

Source:

a. Rated as 7 or above on scale 0-10, where 10=extremely important.

b. Bruce Hepburn, *On-line Communication Trading and Information Services* (MacTavish Hepburn Research 11/97).

c. http://www.bt.com/global_reports/1998-99/intro.htm, 8/7/98.

Note: UK data, n=350 consultations, 200 phone interviews, 60 briefings.

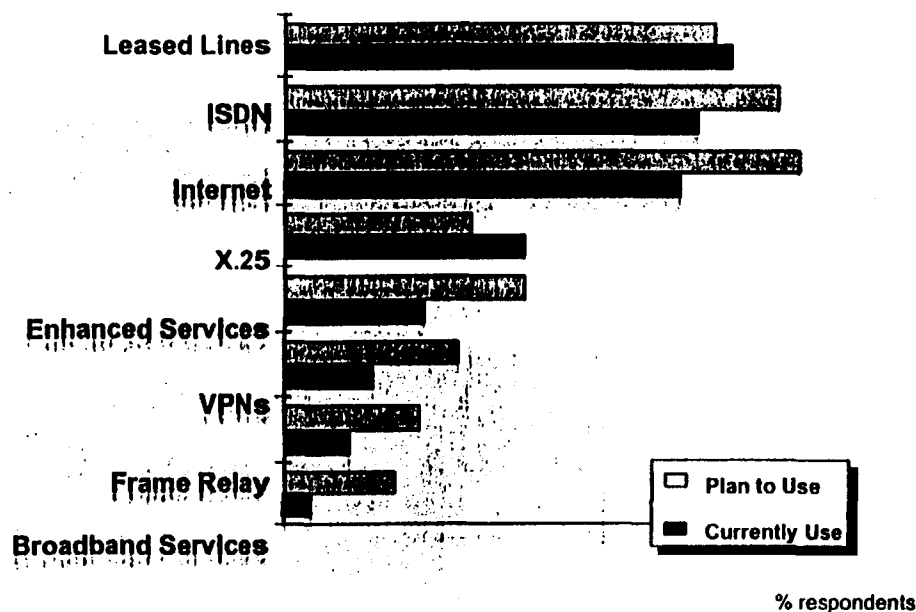
OVERVIEW OF CUSTOMER NEEDS

As a result, spend will gravitate towards emerging technologies that support e-commerce and data



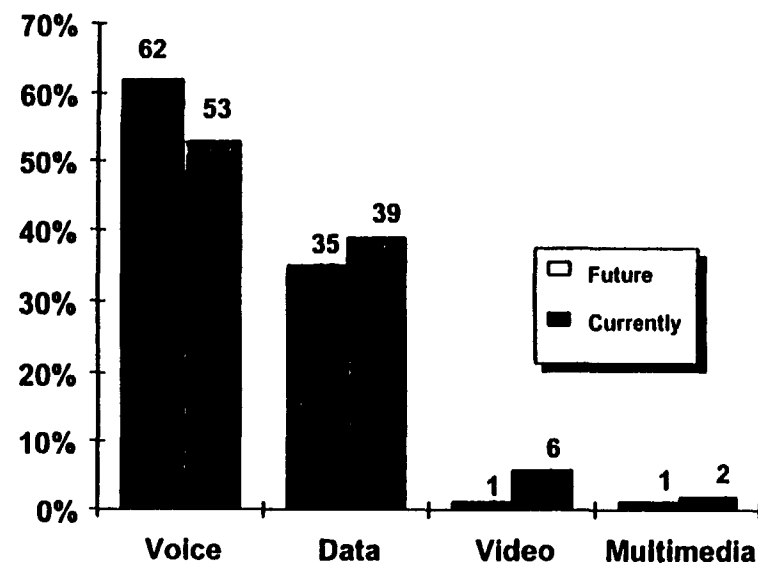
Customers expect their usage of new services to increase . . .

Usage of Public Network Services



. . . resulting in a swing from voice to data

% Budget Spent on Voice, Data, Video and Multimedia Services



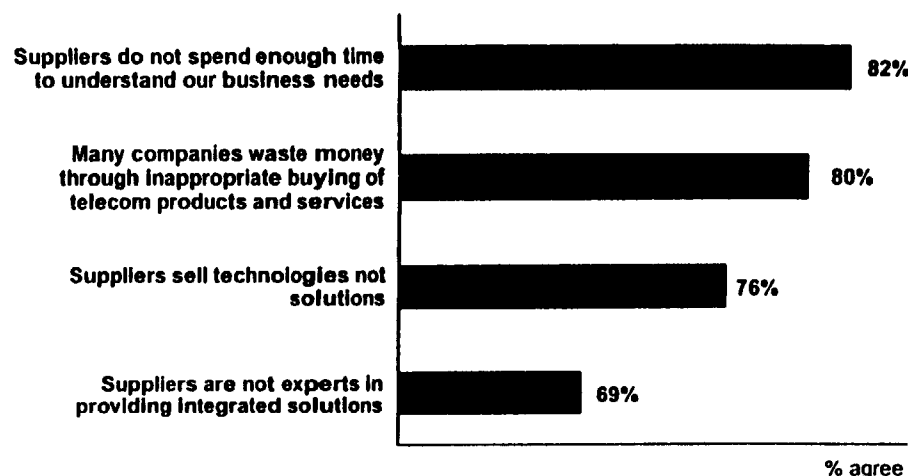
Source: Dataquest, Public Network Services Europe, User Wants and Needs 1997, 30/5/97.
Note: n=401 telephone interviews in France, Germany, UK, Italy, Denmark.

OVERVIEW OF CUSTOMER NEEDS

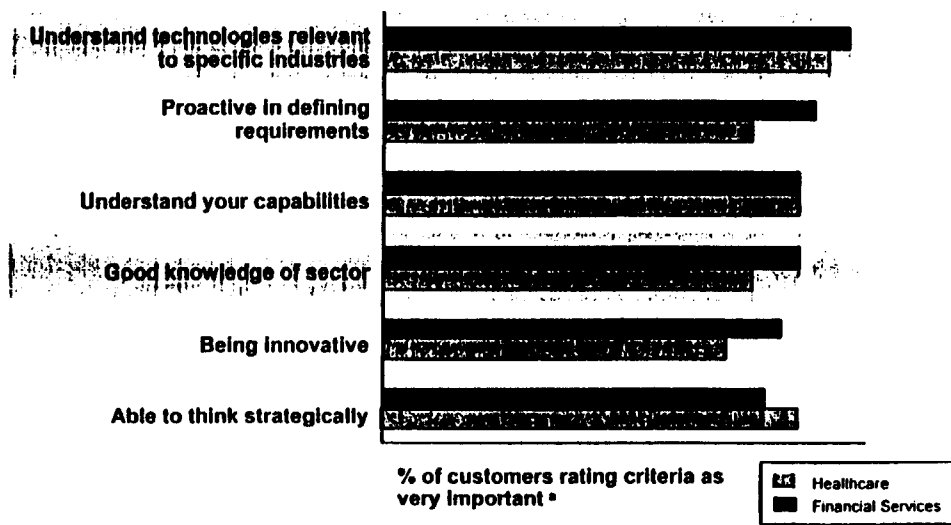
The convergence of these needs means that customers need operators who understand their businesses



UK Telecom Managers Views on Suppliers ^a



Advanced Services Capability Requirements ^b



"When we describe our data requirements many carriers just walk away"

—P. Dominick, Head of Global Deployment, Banque Paribas ^c

"We're looking forward ... to being treated like a customer, not just a user".

—J. C. Barrier, IS Manager, Bay Networks ^d

"While the professionals have adapted to convergence and the changing needs of their businesses, their suppliers have not moved with them".

—M. Hart, Chairman, TMA ^a

Source:

a. <http://www.tma.org.uk/industry/research/lmasurv98pres4.htm>.

b. Bruce Hepburn, *On-line Communication Trading and Information Services*, (MacTavish Hepburn Research 11/97). n=1,650 senior telecom and IT professionals; Rated as 7 or above on scale 0–10, where 10 = extremely important.

c. C. Mandler, UK: But no bouquet from users, *Communications Week International* (25/11/96)

d. M. Thyfault, USA; *Telecom Promise*, *Information week* (22/12/97).

In the future, the challenge for operators will be to develop customer focused services and acquire integrator skills

Customer Needs	Operator Challenges
<i>Global Sales, Products/ Services and Support</i>	<ul style="list-style-type: none">• Build own network• Overcome interoperability standards• Consistent service levels across geographies• Global processes, distribution and support networks• Clear decision making
<i>Globally Consistent and Lower Pricing</i>	<ul style="list-style-type: none">• Owned infrastructure, or• Open relations with lowest price national operators• Level interconnect pricing• Low overheads
<i>Supply Advanced Services</i>	<ul style="list-style-type: none">• Ability to tailor best solution• Acquire or develop integrator skills• Network that supports voice, data and video
<i>Understand Customer and Tailor to Business Needs</i>	<ul style="list-style-type: none">• External, customer focus• Vertical industry knowledge• Central knowledge management